App. No. 10/615,676
Office Action Dated March 17, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Claim 1 is amended.

Claims 14, 15, and 17-20 are canceled.

Listing of Claims:

1. (Currently Amended) An optical head comprising:

a shaping element for shaping a beam emitted from a light source;

a converging element for converging the beam that has been shaped by the shaping element on an optical recoding medium; [[and]]

a first detector for detecting an electric signal based on a zeroth-order diffracted beam and a first-order diffracted beam contained in the beam that has been reflected by the optical recoding medium[[,]];

a second detector for detecting the distance between the spot position of the zeroth-order diffracted beam and the spot position of the first-order diffracted beam;

driving means for swinging the shaping element; and

controlling means for controlling the driving means so that the shaping element is swung based on the distance, which has been detected by the second detector, between the spot position of the zeroth-order diffracted beam and the spot position of the first-order diffracted beam.

wherein the shaping element is provided in a swingable manner so that a distance between a spot position at which the zeroth-order diffracted beam is incident on the detector and a spot position at which the first-order diffracted beam is incident on the detector can be adjusted.

2. (Original) The optical head according to claim 1, further comprising a collimator lens for converting the beam emitted from the light source into a substantially parallel beam,

wherein the shaping element is used for shaping the substantially parallel beam emitted from the collimator lens and is provided so as to be swingable around a swing axis that is

perpendicular to a direction along which the substantially parallel beam is shaped and perpendicular to a travel direction of the substantially parallel beam.

3. (Original) The optical head according to claim 1, wherein the detector has a light-receiving region for receiving the zeroth-order diffracted beam and a light-receiving region for receiving the first-order diffracted beam, and these light-receiving regions are arranged in a direction along which the zeroth-order diffracted beam and the first-order diffracted beam are shaped.

4. (Original) The optical head according to claim 3, wherein the shaping element is provided in a swingable manner so that the spot position of the first-order diffracted beam can be adjusted to be in a center portion of the light-receiving region for receiving the first-order diffracted beam.

5. (Original) The optical head according to claim 3, wherein the light-receiving region for receiving the first-order diffracted beam is divided along a direction perpendicular to the direction along which the zeroth-order diffracted beam and the first-order diffracted beam are shaped.

6. (Original) The optical head according to claim 1, wherein the detector has a light-receiving region for receiving the zeroth-order diffracted beam and two light-receiving regions for receiving the first-order diffracted beam.

7. (Original) The optical head according to claim 6, wherein the light-receiving region for receiving the zeroth-order diffracted beam is arranged between the two light-receiving regions for receiving the first-order diffracted beam.

8. (Original) The optical head according to claim 1, further comprising a polarization beam splitter for changing a travel direction of a substantially parallel beam that has been reflected by the optical recoding medium and passed through the converging element.

9. (Original) The optical head according to claim 8, wherein the detector detects the electric signal based on the substantially parallel beam whose travel direction has been changed by the polarization beam splitter.

10. (Original) The optical head according to claim 8, wherein the polarization beam splitter is arranged between the light source and the shaping element.

11. (Original) The optical head according to claim 2, wherein the shaping element has an entrance surface from which the substantially parallel beam that has been converted from the beam by the collimator lens enters and an emission surface from which the substantially parallel beam that has been shaped by the shaping element is emitted to the converging element, the entrance surface and the emission surface being formed so as not to be parallel with each other.

12. (Original) The optical head according to claim 1, wherein the shaping element is formed by bonding a plurality of optical materials together, refractive indices of these optical materials being different from one another.

13. (Original) The optical head according to claim 1, wherein the shaping element is formed by bonding a plurality of optical materials together, variations in the refractive indices of these optical materials depending on a wavelength being different from one another.

14-15. (Canceled)

16. (Original) The optical head according to claim 1, wherein the light source and the detector are formed integrally.

17-20. (Canceled)